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TO: Mr. Gary Miller, Remedial Project Manager
U.S. Environmental Protection Agency, Region 6

FROM: Barry Forsythe, Ph.D., Technical Liaison
U.S. Fish & Wildlife Service

DATE: 18 June 2009

RE: Documents: Draft Updated Screening-Level Ecological Risk Assessment (SLERA), Gulfco Marine Maintenance Site, Freeport, Texas.

I have reviewed the draft SLERA for the Gulfco Marine Maintenance Site, Freeport, Texas. It is my recommendation that the SLERA be approved after addressing the following comments.

General Comments:

1. The methodologies and assumptions utilized in this draft SLERA go beyond that of a normal SLERA, as per EPA (1997) guidance. Many of the things considered (use of means, 95 UCLs, LOAELs, foodchain modeling, comparisons to background, etc.) are typically done in a baseline ecological risk assessment (BERA).

2. Comparisons to background concentrations of COPECs appear to have been done prior to screening site media exposure point concentrations (EPCs). EPCs should be screened first, as background is not typically allowed to be used to remove COPECs from further evaluation in a SLERA. This step is normally done in a BERA. Understanding that this document is more advanced (i.e., basically a BERA minus site-specific toxicity and tissue data), this step should be done after COPECs are screened against benchmarks. In addition, the validity of using "soil" background concentrations to compare against site sediments is uncertain. While it is agreed those soil background samples may be appropriate for a majority of the "sediment" samples on the North Site, they are questionable for comparisons to those in the more commonly wet areas (i.e., samples 2WSED2, 2WSED3, 2WSED4, 2WSED5, 2WSED6, 2WSED15, 2WSED16, 2WSED17, 4WSED2, and 4WSED3).

3. Suggest for clarification and transparency, that figures previously generated showing sample locations with HQs > 1 be a part of this submittal. There were a number of COPECs where the EPCs were driven by a small percentage of the samples. By showing these on a figure (map), reviewers would be able to make a determination as to concentration gradients and/or hotspots.

4. It's unclear what criteria were utilized to select BAFs and BSAFs. Where they all literature-based (if so, was the most conservative one selected or a measure of central tendency used)? Were any of the tissue (fish and crabs) data from the site used to calculate site-specific values?

Specific Comments:

1. Section 3.3, Page 28: It is stated that ERL, ERM, and the midpoint between them were used for sediment TRVs. Subsequent text/tables/analyses do not appear to indicate that the midpoint was actually used. Please clarify and/or revise accordingly.

2. Section 3.4.8, Pages 31-33: A number of COPECs (max concentrations) were found to exceed their screening level. As presented, the comparisons to acute toxicity values (LC_{50}) provide little value. Typically safety factors (x10 for LOAEL and x100 for NOAEL) are applied to such values. For acrolein, the NOAEL HQ would be 2.2, while below one for the LOAEL. Boron would have no LOAEL exceedances, but NOAEL HQs would range from 3.2 (wetlands area) to a high of 5.8 (intracoastal waterway). For copper, the max concentration would result in a LOAEL HQ < 1, but a NOAEL HQ = 3.0. Based on the safety factors applied to the DDT acute value, the resulting NOAEL HQ equals 2.9. Iron had a NOAEL HQ just over one (1.5), while manganese and silver HQs did not exceed one for either the LOAEL or NOAEL.

3. Section 4.1.1, Page 34: It is stated that, "it is believed that the overall impact of uncertainties related to the exposure analysis results in an overestimate of risk." Suggest that this is not the case as EPCs were means and 95 UCLs, rather than typical SLERA-used maximums.